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Thank you for your request for research regarding **how states calculate graduation rates**. **Ask A REL** is a collaborative reference desk service provided by the 10 regional educational laboratories (REL) that, by design, functions much in the same way as a technical reference library. It provides references, referrals, and brief responses in the form of citations on research-based education questions.

**Please note that REL Southwest has not done an evaluation of the resources themselves, but offers this list to you for your information only.**

## BACKGROUND

“As high schools move to the top of the reform agenda, educators have been scrutinizing one of the most significant indicators of a high school’s performance: the rate of students who graduate. The attention is well-deserved—a high school diploma is the minimal qualification young people need to survive in today’s society.

But there is great debate in education research circles about how many students actually earn a diploma. Various reports cite national graduation rates as low as 70 percent and as high as 83 percent. The state picture is even more confusing: 36 states report graduation rates between 80 and 97 percent. Another source says the reality in these same states is 58–86 percent (Hall, 2005)<sup>1</sup>.

While statisticians argue about whose numbers are best, stakeholders at the school and district level are left wondering how big the problem is, where the problem lies, and more importantly, what they can do to help fix it.”<sup>2</sup>

Following an established REL Southwest protocol, we conducted a search for research reports, websites, as well as descriptive briefs on how states calculate graduation rates. The sources included federally funded organizations, additional research institutions, educational databases, and general Internet searches using Google and Bing. See the methods section at the end of this Ask A REL for additional information on how we identified the following sources.

## QUESTION

What does research tell us about how states calculate graduation rates?

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<sup>1</sup> Hall, D. (2005, June). *Getting honest about grad rates*. Washington, D.C.: Education Trust.

<sup>2</sup>Calculating high school graduation rates: At a glance—<http://www.centerforpubliceducation.org/Main-Menu/Policies/Calculating-high-school-graduation-rates-At-a-glance-/default.aspx>.

## SOURCES

Curran, B. and Reyna, R. (2010). Implementing graduation counts: State progress to date, *NGA Center for Best Practices*. <http://eric.ed.gov/?id=ED514360>.

*From the ERIC abstract:* "In 2005, the governors of all 50 states made an unprecedented commitment to voluntarily implement a common, more reliable formula for calculating their state's high school graduation rate by signing the Graduation Counts Compact of the National Governors Association (NGA). Five years later, progress is steady. Twenty-six states say they have reported, or will have reported by the end of 2010, their high school graduation rate data using the Compact formula. Nineteen additional states plan to report the Compact rate by the end of 2011, and three more states plan to report this rate by the end of 2012. Two states received a waiver from the U.S. Department of Education to report the Compact rate after 2012. In total, 48 states will report the Compact rate for the cohort graduating in 2011. Eighteen of the 26 states reporting the Compact rate also say they use the Compact rate to meet the graduation rate requirements for adequate yearly progress under the No Child Left Behind Act. Up by seven since 2009, 49 states now report they have the data systems needed to track individual students and more accurately calculate the high school graduation rate using the Compact rate. Not all of these states have tracked a cohort the full five years from eighth grade through high school graduation. Twenty-one of the 26 states reporting the Compact graduation rate also report additional indicators of student outcomes. One additional state plans to do so in the future. All 26 states report or plan to report disaggregated graduation rate data for different student subgroups, such as minority students, disadvantaged students, and students with disabilities. Twenty-one states have set graduation rate goals at 90 percent or higher. Appendices include: (1) State Policies to Measure High School Graduation; and (2) Ten Essential Elements of Longitudinal Data Systems: State Status. (Contains 5 notes.) [For the 2009 report, see ED507634.]"

Houck, E. A. and Kurtz, A. (2010). Resource distribution and graduation rates in SREB states: An overview. *Peabody Journal of Education*, v85 n1 p32-48. <http://eric.ed.gov/?id=EJ910731>.

*From the ERIC abstract:* "Recognizing the interrelated nature of the standards movement, school finance litigation, and student outcomes, this study investigates the relationship of school funding and the specific outcome measure of cohort graduation rates in 16 Southern states that comprise the Southern Region Education Board (SREB). Research indicates that Southern schools may be more responsive to structural policy levers than schools outside of the U.S. South. Therefore, it is important to know how Southern states stack up against each other using a standardized calculation of graduation. Of interest, the calculation of graduation rates itself varies across states. Although some states count students who complete a GRE as a graduate, for example, others do not. The economic literature on fiscal and educational returns to high school graduates do not seem to suffer from this discrepancy. Almost all studies find tangible economic returns to high school graduates, as a function of both additional years of education and the social signals a high school degree sends about recipients--a "sheepskin effect." Recently, consensus has formed over the use of 5-year

cohort measures of graduation success as an acceptable method for calculating graduation rates. Using data from the National Center for Education Statistics, this article operationalizes that calculation for all 16 SREB states; compares the derived rates to state-reported rates; classifies the SREB states in terms of their performance against this metric; and further examines relationships between educational resources, community contexts, and state policies. Overall findings indicate substantial differences between state-reported graduation rates and the rates derived from the cohort-based approach. In addition, although this research finds that district-level race and class variables are associated with decreased graduation rates and that district revenue is associated with increased graduation rates, associations between resources and cohort graduation rates are stronger within states than between--an indication that state-level context and policy approaches drive most of the variation in graduation rates once they are calculated by a similar metric. These findings imply that state-level educational policies--beyond simple investment--may serve to impact cohort graduation rates. This article reviews the policy context driving the analysis of graduation rates in SREB states, describes the data and methods used in analysis, presents findings from the analysis, and discusses implications for Southern states as they move forward. (Contains 8 tables, 2 figures and 3 footnotes.)”

Stetser, M. C. and Stillwell, R. (2014). Public high school four-year on-time graduation rates and event dropout rates: School years 2010-11 and 2011-12. First Look. NCES 2014-391, *National Center for Education Statistics*.  
<http://eric.ed.gov/?id=ED544798>.

*From the ERIC abstract:* “This National Center for Education Statistics (NCES) First Look report introduces new data for two separate measures of 4-year on-time graduation rates as well as event dropout rates for school year (SY) 2010-11 and SY 2011-12. Specifically this report provides the following: (1) Four-year adjusted cohort graduation rate (ACGR) data reported by state or jurisdiction and, for the first time, a national estimated 4-year cohort graduation rate; (2) Averaged freshman graduation rate (AFGR) data by state or jurisdiction and a national estimated AFGR; and (3) High school event dropout rate data by state or jurisdiction and a national estimated event dropout rate. Both the AFGR and ACGR are 4-year on-time graduation rates that provide measures of the percent of students that successfully complete high school in 4 years with a regular high school diploma. Event dropout rates provide a measure of the percentage of students who drop out in a single year. The tables in this report present descriptive information for the United States and for individual states and jurisdictions. The findings chosen for this report provide only a few examples of how the graduation and dropout data may be used. Compared to other measures of graduation rates, the ACGR is considered the most accurate measure available for reporting on-time graduation rates (Seastrom et al. 2006b). A 4-year ACGR is defined as the number of students who graduate in 4 years with a regular high school diploma divided by the number of students who form the adjusted cohort for that graduating class. The term "adjusted cohort" means the students who enter grade 9 plus any students who transfer into the cohort in grades 9-12 minus any students who are removed from the cohort because they transferred out, moved out of the country, or were deceased (34 C.F.R. § 200.19). This First Look provides users with an opportunity to access SY 2010-11

provisional data that have been fully reviewed and edited, and SY 2011-12 preliminary data that have been subjected to a limited data review and editing. Neither set of data have been available publicly prior to the release of this report. Two appendices present: (1) Collection Methodology and Sources of Error; and (2) Detailed Methodology for Calculation of Four-Year On-Time Graduation Rates and Event Dropout Rates. A list of references and related data files is included.”

## ADDITIONAL ORGANIZATIONS AND RESOURCES TO CONSULT

Bracey, Gerald W. (2009). Calculating Graduation Rates: We Can Do Better, *Principal Leadership*, v9 n9 p58-60. <http://eric.ed.gov/?id=EJ851783>.

*From the ERIC abstract.* “The statistic of choice to prove that U.S. schools are failing has changed over time. First, it was test scores that meant they could not keep up with Japan. More recently it has become graduation rate. Often accompanying the graduation rate in the failure litany is the drop-out rate. NCLB puts additional pressure on dropout counts because it calls on schools to improve their graduation rates. One would think the calculation of the graduation rate and its "inverse," the drop-out rate, would be a straightforward matter. One counts the number of students entering ninth grade and the number exiting with diplomas four years later. The latter divided by the former would provide the graduation rate. That is a sensible way to start, but it is not the way it is done and it would not be perfect even if it were. There are complicating factors. Calculating the drop-out rate and the graduation rate has generated some intense debates. In this article, the author contends that although it may never be a perfect science, the calculation of an "official" graduation rate can be improved and other meaningful factors can be reported.” NOTE: Not peer-reviewed.

Cook, B. and Pullaro, N. (2010). College graduation rates: Behind the numbers. American Council on Education.

From the Executive Summary: “Since President Obama stated that “by 2020, America will once again have the highest proportion of college graduates in the world,” postsecondary graduation rates have taken on increased importance and scrutiny. Because the issue of graduation rates has long been a favorite topic of higher education policy researchers, there is no shortage of reports that detail the disparity in graduation rates by race, income, and institutional type, as well as the limitations of the data most often used to calculate graduation rates. Unlike other reports on graduation rates, the focus of this report is not on disparities in graduation rates, how to improve graduation rates, or how to fix the way in which graduation rates are calculated. The purpose of this report is to provide a layperson’s guide to the most commonly reported graduation rates and the databases used to calculate these rates. More specifically, this report provides policy makers and policy researchers with a history of the databases that are most often used to calculate graduation rates as well as the advantages and disadvantages of each database (this information also can be found in a summary table in the appendices). Additionally this report suggests several factors for policy makers to consider before using graduation rate data from existing databases as a way to assess institutional success.”

Stanley, K. R., Spradlin, T. E., Plucker, J. A. (2008). Calculating high school graduation rates. Education Policy Brief. Volume 6, Number 5, *Center for Evaluation and Education Policy, Indiana University*. <http://eric.ed.gov/?id=ED503862>.

*From the ERIC abstract:* "Reports consistently demonstrate that the attainment of a high school diploma is not simply of value to the individual student, but that the benefit of a high school diploma is reaped by the graduate's community as well. Most educators readily acknowledge the importance of dropout prevention and the significance of a high school diploma. A corresponding issue is the accuracy with which dropout and graduation rates are calculated. This policy brief examines various calculation methods, the history behind the use of particular methodologies, and the strong nationwide trend toward a cohort rate. The report also examines Indiana legislation that has shaped the Indiana graduation rate methodology. Advocacy for a uniform national methodology is also discussed. Five web resources are included. (Contains 37 endnotes and 3 tables.)" NOTE: This is a non-journal brief.

Zubrzycki, J. (2012). New rules push down grad rates, *Education Week*, v31 n27 p1, 12. <http://eric.ed.gov/?id=EJ975117>.

*From the ERIC abstract:* "States are grappling with a federal requirement that is forcing them to use a new, more uniform method of calculating high school graduation rates--a method that, in some states, is yielding rates that are 20 percentage points lower than those states have reported in the past. Under a 2008 update to federal education rules, the states were required to replace their patchwork of graduation-rate formulas with a four-year "cohort" rate, beginning in the 2010-2011 school year, and to use that number this school year to determine whether schools are making adequate progress under the No Child Left Behind Act. The new rate is part of an effort to improve both the consistency and accuracy of graduation-rate records across the country and to move closer to allowing for state-by-state comparisons. As the 2008 regulations themselves note, "establishing a uniform and more accurate measure of calculating graduation rate that is comparable across states is a critical and essential step forward in improving high school accountability." The four-year adjusted cohort rate set out in the regulations requires states to track individual students and capture how many first-time 9th graders in a given class proceed to graduate with a standard diploma four years later. That method is considered more accurate than previous methods but often yields a graduation rate that is lower than the results of states' old formulas. By way of comparison, the so-called "leaver rate," which was at one point in use in 32 states, calculates a percentage to represent the number of students who graduate with a standard diploma compared with the sum of those students, students who receive an alternative completion credential, and students who have dropped out over the course of high school. Students who do not fit one of those school-leaving categories can fall through the cracks using this formula. Another commonly used formula, the "averaged freshman graduation rate," calculates the number of students who graduate with a standard diploma in four years but relies on an estimate rather than an exact number of 9th graders. The new calculation means that the graduation rate may appear dramatically different even if the number of students who actually graduate hasn't changed." NOTE: Not peer-reviewed.

## Center for Public Education (CPE)

Calculating high school graduation rates: At a glance—Posted: June 23, 2006.  
<http://www.centerforpubliceducation.org/Main-Menu/Policies/Calculating-high-school-graduation-rates-At-a-glance-/default.aspx>.

*An excerpt from the article:* “While statisticians argue about whose numbers are best, stakeholders at the school and district level are left wondering how big the problem is, where the problem lies, and more importantly, what they can do to help fix it.

- Why it's hard to know how many students graduate. Few states and districts have systems in place to collect and report accurate, reliable information on graduation rates. At the same time, many states and districts rely on weak methods for calculating the number of diplomas, for example, by basing the graduation rate on the number of students who entered 12th grade in the fall, and thus not accounting for students who may have dropped out in 9th, 10th, or 11th grade. The result is that many published graduation rates tell only part of the story about how many students are graduating. Some states' approaches misrepresent the true proportion of students receiving a standard diploma by more than 20 percentage points (Hall, 2005).
- The best way to get the whole picture. In order to improve the quality of calculating and reporting graduation rates, the National Governors Association (NGA) developed the Graduation Counts Compact (2005). Under the Compact, states commit to developing a high-quality, student-level data collection system that tracks students from kindergarten through college. It also includes a four-year cohort graduate rate formula: The number of students who graduated divided by the number of students enrolling in 9th grade for the first time—plus the students who joined this class of students (that is, the cohort) and minus the students who left.

For example,

$$\frac{80 \text{ Graduates in 2006} \times 100}{(100 \text{ 9th graders in 2002}) + (20 \text{ transfers in}) - (10 \text{ transfers out})} = 72\% \text{ grad rate}$$

All 50 states have signed the contract and promised to implement the reforms. However, at present fewer than half of the states have electronic student record systems that can follow individual students from pre-kindergarten through high school, and only a handful are using them to calculate a four-year cohort graduation rate (*Education Week*, 2006). It may take years for other states to get such systems in place.

- The next best way—four-year estimates. In the absence of accurate student tracking systems, statisticians have developed a way of estimating graduation rates that produces a pretty good picture of how many students complete high school in four years. Enrollment-based graduation rate estimates rely on grade-by-grade enrollment counts from NCES's Common Core of Data (CCD) to

approximate how many 9th graders make it to graduation four years later. Advocates of this approach argue that even though these estimates cannot track individual students, they show how much a given class “shrinks” over time by examining how many 9th graders are enrolled one year, 10th graders the next year, 11th graders the next year, and so on.

Many recent high-profile reports on high school graduation are based on four-year estimates, most notably, the Manhattan Institute’s methodology, which calculates on-time graduation at about 70 percent (Greene, 2003).

It’s important to note that neither the four-year cohort nor the four-year estimate approach includes students who take five or more years to earn a diploma or students who earn alternate credentials like the GED or certificates of completion. For a complete picture of high school attainment, NGA recommends collecting and reporting these data as complementary rates to the four-year completion numbers.”

Calculating high school graduation rates—Posted: June 23, 2006.

<http://www.centerforpubliceducation.org/Main-Menu/Policies/Calculating-high-school-graduation-rates-At-a-glance-/Calculating-high-school-graduation-rates-.html>.

Excerpts from the article: “In this guide the Center for Public Education examines why there is such a variation in reported graduation rates, and why it has been difficult for state and local agencies to produce an accurate, reliable measure. We also describe the latest graduation rate estimates and explain recent initiatives to improve how the indicator is collected, reported, and analyzed. Last, we provide some recommendations for local leaders so they can better understand and communicate about local graduation rates.”

“All of the following questions affect which students are represented in the equation and, subsequently, the relevance of the results. States whose methodologies don’t provide sound answers to these questions wind up with questionable results.

- **Who will we count?** States have to know what they mean by “graduate.” For example, a graduate might be defined broadly as “a student who completed high school” or more narrowly as “a student who earned at least a standard diploma within four years of entering 9th grade.” Students who meet the definition are part of the numerator.
- **How will we count them?** Having defined the population of graduates, states must then define the population against which the numerator will be compared (i.e., the denominator). This unit of comparison plays a crucial part in the ultimate relevance of the measure. The denominator should represent in some way students *who entered the pipeline* to graduate, which includes students who did graduate as well as those who did not.
- **How will we represent them?** Having defined who the students are, what data will be used to represent them in calculations? These are the numbers that get plugged in to the numerator and denominator.

- **How will we *account for them*?** States must establish policies and procedures to ensure that all students are represented by the data and represented accurately.”

### **Indiana Department of Education—Indiana’s calculated graduation rate**

<http://www.doe.in.gov/accountability/graduation-rate>.

From the site: “An accurate measure of the high school graduation rate is a critical step toward improving our understanding of students who do not earn regular high school diplomas or who take longer than four years to graduate. IC 20-26-13 outlines the formula for determining high school graduation rates. The formula establishes a cohort (or expected graduation year) of first-time freshmen that expands and contracts as students transfer in and out of school during the years that follow. Since a student never moves to a different cohort, we have an accurate measure of the percentage of students who graduate in four years or less. By publishing five and six year rates, we account for those students who persist even though they do not graduate in the standard number of years.

#### *Graduation Rate Audit*

For any school where the difference between the estimated graduation rate and the reported four-year cohort graduation rate is more than five percent, IDOE must request the written documentation from the schools, which supports removing a student from the cohort because of transfer or any of the other circumstances enumerated in IC 20-26-13-10. Schools may also pursue a voluntary a graduation rate audit as part of the A-F appeals process.”

Indiana Department of Education Graduation Rate Frequently Asked Questions (FAQ)—<http://www.doe.in.gov/sites/default/files/accountability/graduation-rate-faq.pdf>.

### **Public Policy Institute of California—Calculating High School Graduation Rates by Paul Warren, Posted January 19, 2016.**

[http://ppic.org/main/blog\\_detail.asp?i=1938](http://ppic.org/main/blog_detail.asp?i=1938).

*An excerpt from the article:* ESSA requires states to calculate “cohort” graduation rates—which involve tracking students from 9th through 12th grade. The cohort graduation rate means something different at alternative schools than it does for regular schools. Students often transfer to alternative schools because they are struggling in school. CDE also reports that students attend alternative schools for an average of less than four months. Even so, CDE assigns students who transfer to alternative schools to those schools’ cohorts. Since CDE does not calculate graduation rates for most alternative schools, 59,300 high school seniors—or 12 percent of the Class of 2014—are excluded from statewide data (although these students are usually included in their districts’ graduation rates).



## Georgia Department of Education—

<http://www.gadoe.org/>—Four-year Adjusted Cohort High School Graduation Rate Frequently Asked Questions.

<https://view.officeapps.live.com/op/view.aspx?src=http%3A%2F%2Fwww.gadoe.org%2FExternal-Affairs-and-Policy%2Fcommunications%2FDocuments%2FFour-year%2520Adjusted%2520Cohort%2520High%2520School%2520Graduation%2520Rate%2520FAQ.docx>.

## Virginia Department of Education—Calculating Virginia’s On-Time Graduation Rate

[http://www.doe.virginia.gov/statistics\\_reports/graduation\\_completion/cohort\\_reports/calculating.pdf](http://www.doe.virginia.gov/statistics_reports/graduation_completion/cohort_reports/calculating.pdf).

## METHODS

### Keywords and Search Strings Used in the Searches:

How states calculate high school graduation rates; Calculating high school graduation rates

### Search of Databases and Websites

- Institute of Education Sciences (IES) website (<http://www.ies.ed.gov>) and IES sources: Regional Educational Laboratory (REL) Program, National Center for Education Statistics (NCES), National Center for Education Research (NCER), What Works Clearinghouse (WWC)
- ERIC database ([www.eric.ed.gov](http://www.eric.ed.gov))
- Google Scholar ([scholar.google.com](http://scholar.google.com))
- Google ([www.google.com](http://www.google.com))
- Bing ([www.bing.com](http://www.bing.com))

### Criteria for Inclusion

REL Southwest selected resources that provide research about how states calculate graduation rates. When REL Southwest staff reviewed resources, we considered – among other things – three factors:

1. Date of Publication: The most current information (primarily published from 2010 to the present) is included.
2. Source and Funder of the Report/Brief/Article: Priority was given to publications written in relevant, peer-reviewed journals or reports or produced by well-known research organizations.
3. Methodology: sources include reported studies, literature reviews and policy reports.

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